1 copy in each MIDAS, SAMOS & DISCOVERER file

19 JAN 1960

AFDDC

Status of SAMOS, MIDAS and DISCOVERER

AFCCS

1. In 1946 the USAF directed the Rand Corporation to study the feasibility of accomplishing reconnaissance from satellites. When, in 1947, the study concluded that a reconnaissance satellite was feasible additional emphasis was given to engineering studies of critical subsystems of such a system. By March 1955 a G.O.R. had been published. Finally, after suitable source selection procedures, a prime contract for development of the WS-117L Advanced Reconnaissance System was awarded to the Lockheed Aircraft Corporation in October 1956. A more complete chronology of these and events subsequent to 1956 is attached.

2. It is quite certain that the launch of Sputnik I by the Soviets on 4 October 1957 gave an acceleration to this program it might not otherwise have had. For this reason mention should be made of some of the more significant post-Sputnik events which occurred:

1 Nov 1957 - SecDef authorized acceleration at maximum rate consistent with good management.

1 Jan 1958 - Early orbital capability of a WS-117L satellite was authorized through use of available THOR boosters (DISCOVERER).

7 Feb 1958 - Authority for fiscal and technical direction over WS-117L vested in ARPA.

5 Nov 1958 - ARPA separated MIDAS (Subsystem G) from the WS-117L and provided $750,000 for three months work (approximately 5 million USAF dollars loaned to support this program for six months pending decision from ARPA to provide maximum support).

17 Dec 1958 - SAMOS reoriented by the ARPA in following manner:
a) deletion of 6" camera development
b) acceleration of 36" camera readout system
c) institution of recovery program to do: (1) mapping and charting; (2) high resolution (5') photo reconnaissance.

30 Jan 1959 - Date of submission of current development plans for SAMOS, MIDAS and DISCOVERER.

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26 May 1959 - ARPA deleted the mapping and charting development effort from SAMOS.

24 June 1959 - ARPA advised AFBMD to defer work on recovery program pending review of the entire program for FY 1960.

23 Jul 1959 - Air Council considered the FY 60 and FY 61 programs which subsequently did not receive approval from ARPA.

21 Oct 1959 - AFBMD advised of the DOD established fund ceiling for these programs for FY 60 and FY 61.

17 Nov 1959 - SecDef returns programs to the USAF.

20 Nov 1959 - The last DISCOVERER satellite launched (No. 8) - came the closest to achieving all of the objectives: launch, orbit and recovery.

3. To point up the amount of investment the Department of Defense has made in these programs the following fund history is presented:

FY 1956

WS-117L	389,245

FY 1957

WS-117L	13,900,000

FY 1958

WS-117L	66,572,553

FY 1959

SAMOS	99,988,000
DISC.	[redacted]
MIDAS	29,847,000

4. The problems we face today with these programs are complex but, stated briefly, go like this:

MIDAS - the consensus of the scientists who are privy to information on this program is that it should be accelerated but not on the basis of "concurrency." The scientists have sufficient skepticism as to the capability of the electronic components in the satellite to operate reliably unattended for the period of time required (up to one year) that they resist the expenditure of any funds for future operation of MIDAS at this time. The Air Force military generally believe the necessary reliability can be attained, and we should plan and fund now for operation of the system by January 1963.

SAMOS - Dr. York's advisors are of the opinion that the only real valuable reconnaissance information which can be obtained will come from the film stored within satellites which are recovered from orbit. This, happily, gives them visions of vast acres of financial pruning such as in the tracking and acquisition stations and the operations and processing center which are required primarily for the photo and ferret readout programs. The Air Force military generally believe that the present program is sound and that there will be a place for reconnaissance information obtained by both readout and recovery techniques. Over all of this hangs the ever present concern as to whether, for geopolitical reasons, the President will authorize reconnaissance satellites to be flown over Russia, even in test.

DISCOVERER - There is general agreement that the present 29 flight program is sound and necessary.

FUNDS - To accomplish the 29 flight DISCOVERER program and meet an operational date of July 1962 for SAMOS and January 1963 for MIDAS it is expected the following fund deficiencies must be made up by internal Air Force reprogramming action subject to further approval by the DOD:

DISCOVERER	FY 1960	FY 1961
REQUIRED	[redacted]	[redacted]
PREVIOUSLY BUDGETED	[redacted]	[redacted]
DEFICIT	[redacted]	[redacted]
MIDAS		
REQUIRED R&D	[redacted]	[redacted]
OPS	[redacted]	[redacted]
DOD CEILING R&D	[redacted]	[redacted]
OPS	[redacted]	[redacted]
DEFICIT	[redacted]	[redacted]
SAMOS		
REQUIRED R&D	[redacted]	[redacted]
OPS	[redacted]	[redacted]
DOD CEILING R&D	[redacted]	[redacted]
OPS	[redacted]	[redacted]
DEFICIT	[redacted]	[redacted]
TOTAL DEFICIT	[redacted]	[redacted]

5. The following schedule has been established for the purpose of attempting to resolve an Air Force position on these programs for submission to the DOD:

1 Feb - Meeting of various Weapons Board Panels

5 Feb - Meeting of Weapons Board

10 Feb - Meeting of AF[illegible]C

15 Feb - Submission to DDR&E

6. In the event an Air Staff position relative to FY '60 and FY '61 programming of additional funds is required prior to 20 February, a minimum necessary program* needed to maintain the present momentum is suggested below and further discussed in Atch. #2.

DCS/D best judgement for funding is:

	FY 1960	FY 1961	TOTAL
DISCOVERER	[redacted]	[redacted]	[redacted]
SAMOS	[redacted]	[redacted]	[redacted]
MIDAS	[redacted]	[redacted]	[redacted]
CEILING	[redacted]	[redacted]	[redacted]
REPROGRAMMING REQ.	[redacted]	[redacted]	[redacted]

Note: Facilities costs not included in these estimates

Wilson called 1/21

/s/
ROSCOE C WILSON
LT. GEN USAF
DCS/DEVELOPMENT

2 Atch
1. Gen Background: SAMOS, MIDAS & DISCOVERER
2. DCS/D Proposed Program

* SAMOS and DISCOVERER enjoy nation's highest priority and next highest national priority requested for MIDAS not yet approved

[illegible] PROPOSED PROGRAM

The minimum acceptable position of the Air Force should be one that is logical, supportable, fully agreed to by all AF interested people. The "requirement" must be absolutely uncontestable and the proposed program must support "ONLY" this requirement. From our understanding of the requirements the following program is recommended:

A. DISCOVERER

1. 29 Flight program.
2. Maximum effort to develop SAMOS and MIDAS vehicles and subsystems.
3. Re-evaluate ground environment to consolidate or eliminate duplicative functions.
4. Possible reduction in funds required.

B. SAMOS

1. 1st Flight (June 1960).
2. Re-evaluate R&D program with objective of reducing number of flights (less than 18).
3. Restrict ground environment to VAFB (TAA - launch), SOC (LMSD), NE TAA, SS-I (Dev.(Denver)-Exploit. (SAC))
4. Maximum use of DISCOVERER net and re-evaluate launch pad requirements.
5. Establish R&D data link VAFB to DCC (LMSD).
6. Provide for NO exploitation of intelligence at Denver.
7. Provide SAC enough equipment to exploit take from R&D flights.
8. No real time data (intelligence) from NE to SAC or Denver except as necessary for vehicle control on orbit and that necessary for development at Denver.
9. Emphasize recovery system (payload compromise to be in ferret not photo readout).

attach #2

10. SS-I reduced to (a) collection of satellite data (b) Reconstitution (c) put data on customer format (d) design and develop equipment to satisfy specific job as out-lined here, (e) producing specified number of copies (f) Re-evaluate entire SS-I with objective of simplifying and reducing sophistication and scope.

11. Re-evaluate 6594 Test Wing requirements in accordance with realigned program.

12. Determine new IOC (funds - T&A - TOCC - 6594 - etc.).

13. Move SS-I from Denver to SAC as soon as practicable.

C. MIDAS

1. 1st and 2nd flight (Feb-Mar 1960 AMR) with special emphasis on producing data (reliability, scope, capability) aimed at getting operational go ahead on 1 July 1960 (OSD-NORAD).

2. Re-evaluate total R&D flight schedule.

3. Restrict ground environment to VAFB (T&A - launch), SE Africa injection station, Alaska readout, and communications to include NORAD.

4. Maximum use of DISCOVERER and SAMOS net and integration with NORAD.

5. Development objective remains firm - slip schedule.

6. Re-evaluate launch pad requirements.

7. Get Brickbat priority (other than .01).

8. Re-evaluate 6594 Test Wing requirements.

9. Determine new IOC (Central T&A - TOCC - UK - N. Atlantic, etc.).

III. FY 1960 and 61 Fund Requirements

1. SAMOS and DISCOVERER enjoy nation's highest priority, MIDAS request for next highest.

2. No operational funds in FY 60 and 61 but operational funds become heavy in FY 62-63.